

We claim:

1. A recombinant host having stably incorporated into the genome a gene encoding a heterologous enzyme selected from the group consisting of a polyhydroxyalkanoate synthase and a 4HB-CoA transferase.
2. The host of claim 1 having stably incorporated into its genome both a polyhydroxyalkanoate synthase and a 4HB-CoA transferase.
3. The host of claim 1 wherein the host is *E. coli*.
4. The host of claim 3 wherein the heterologous enzyme is a polyhydroxyalkanoate synthase and the host expresses an endogenous enzyme with 4HB-CoA transferase activity.
5. The host of claim 1 further comprising genes expressing enzymes selected from the group consisting of β -ketothiolase and acetoacetyl Co reductase.
6. A method for enhancing production of polymers containing 4HB in a host comprising
stably incorporating into the genome of the host a gene encoding a heterologous enzyme selected from the group consisting of a polyhydroxyalkanoate synthase and a 4HB-CoA transferase.
7. The method of claim 6 wherein the host has stably incorporated into its genome both a polyhydroxyalkanoate synthase and a 4HB-CoA transferase.
8. The method of claim 6 further comprising enhancing expression of the heterologous enzyme.
9. The method of claim 8 wherein expression is enhanced by mutating the host followed by providing 4HB as a substrate and screening for polymer production by the mutated host.
10. The method of claim 6 further comprising providing a host expressing enzymes selected from the group consisting of α -ketoglutarate transaminase, glutamate-succinic semialdehyde transaminase, glutamate dehydrogenase, glutamate decarboxylase, 4-hydroxybutyrate dehydrogenase and 4-hydroxybutyryl CoA transferase.

11. The method of claim 6 further comprising providing a host expressing enzymes degrading arginine, glutamine or proline to produce gamma amino butyric acid.
12. A 4HB polymer produced by a recombinant host having stably incorporated into the genome a gene encoding a heterologous enzyme selected from the group consisting of a polyhydroxyalkanoate synthase and a 4HB-CoA transferase.
13. A vector comprising an isolated gene encoding a 4HB-CoA transferase under the control of a promoter for enhancing expression after integration into the genome of a heterologous host.